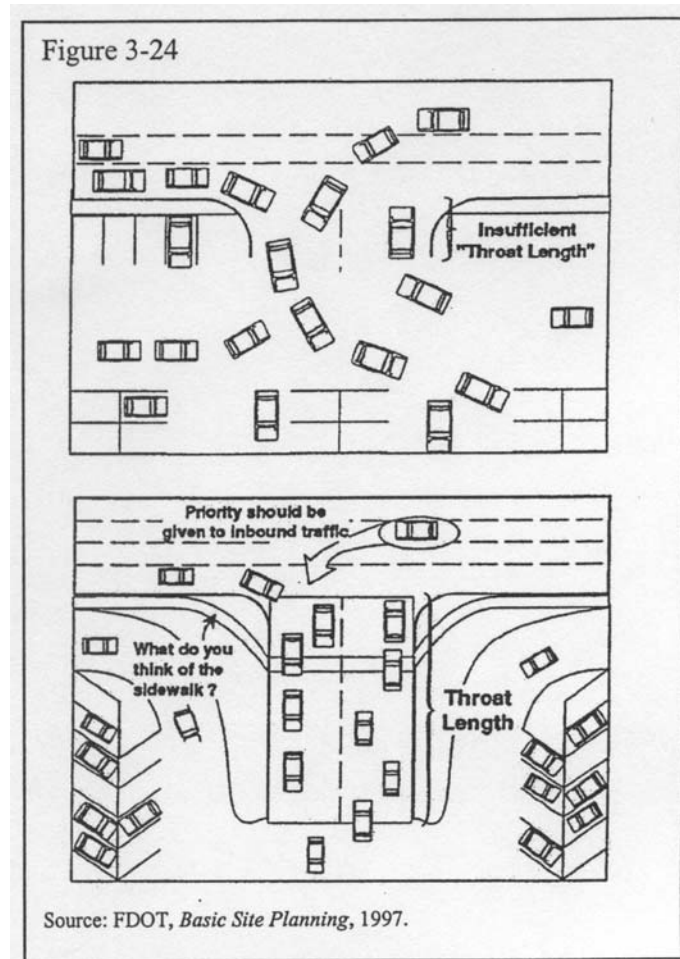


Frontage Road concepts are illustrated in the following excerpts taken from the Guidebook and reprinted here for easy reference.



The key frontage road design component is the separation distance of the frontage road from the main highway corridor. Existing setback distances in this vicinity appear to be adequate to accommodate this design. It remains crucial to maximize this separation distance as much as possible to decrease conflicts and congestion.

Another critical issue involves pedestrian crossings of heavily used commercial drives (as illustrated in the above drawings). This is not a present concern but should be taken into account as development occurs on this edge of the Village.

(Map Item #7) - Additional sight distance and clear vision corner strategies should be studied at the US-45/Greenland Road intersection. Concerns have been expressed by numerous residents at this location due to recent landscaping improvements at the gas station. The landscaping is attractive in the summer months, but the height of several of the bushes and the location of the planter itself obstructs vision. Snow removal operations are limited by the location of the retaining wall and the signs and utility poles that exist within it. The Michigan Department of Transportation has requested that the planter be removed, as it was apparently placed in the MDOT right-of-way without a permit, and it interferes with the clear vision triangle at this intersection. Sight distance issues as a result of signs, terrain, and the proximity of structures to the roadway will continue to exist, however. Continued monitoring of this intersection will be necessary to minimize future problems.



Photo 13: Five corners intersection from what will become Greenland Road (now M-38). US-45 enters from the left beyond the Mobil Station. Snow storage and the slight hill on Greenland Road combine to affect clear vision at this intersection.

Clear Vision dimensions are illustrated in the following excerpt taken from the Guidebook.

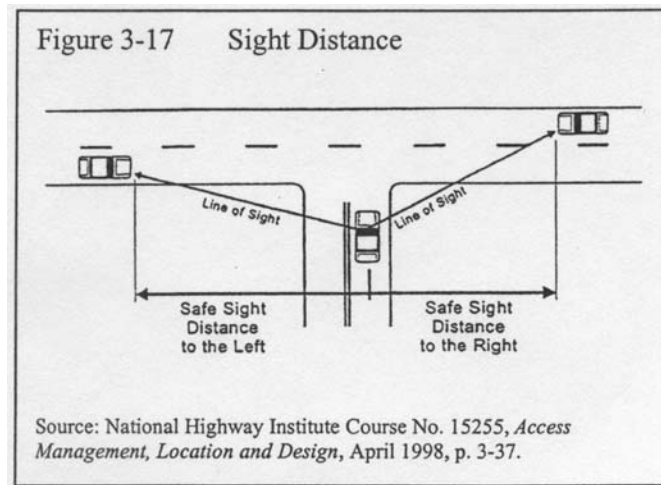


Table 3-3: Stopping Sight Distance

Design Speed of Highway (MPH)	Stopping Sight Distance (feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730

Height of Eye 3.5 Feet – Height of Object 2 Feet

Source: AASHTO, *A Policy on Geometric Design of Highways and Streets*, 2001

(Map Item #8)

Renaissance Zone (50 acres) located off of Giesau Drive.

This site presently houses a Home Health Care office with another 10,000 square –foot speculative building and several lots available for development. The Giesau Drive intersection is an area to monitor closely, as development grows in this location with highway proximity in all directions; Escanaba & Lake Superior Railroad access within one mile; county airport access within three miles and Sawyer International Airport within 125 miles.

The previously detailed Access Management improvements should also be pursued in the future for this development. Providing curb and gutter to delineate the main entrance, the use of right turn lanes, and passing flares, and most importantly shared use drives and / or a frontage road in order to decrease conflict points and handle turning movements more efficiently and facilitate safer ingress / egress from highway corridor traffic.

(Map Item #9)

Future residential development in an area between M-38 and US-45 south of Payne Street;

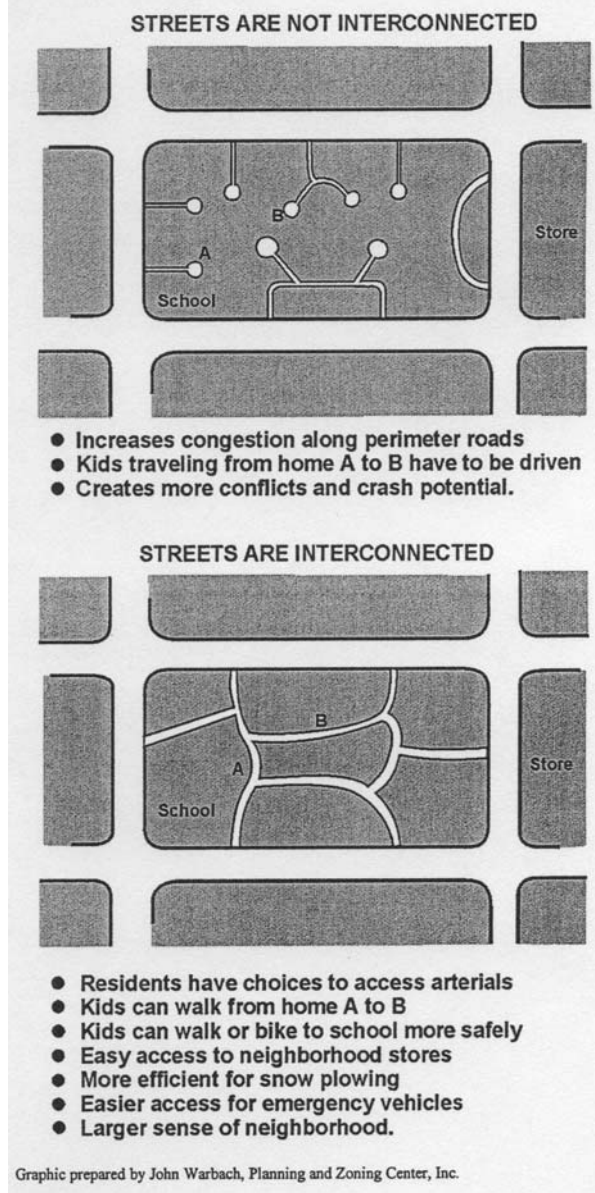
If the Village extends its infrastructure, this approximately 70-acre site could develop and dramatically increase traffic at the intersections of Payne Street at both highway(s) M-38 and US-45. Continued surveillance should take place to identify pedestrian crashes due to the proximity of the school. If this develops as a key residential area, one critical issue will involve pedestrian crossings of both the M-38 highway corridor as well as Payne Street. Maintaining clear vision corners should be taken into account in the development of landscaping. Bushes can be beneficial to channel pedestrians to cross at a singular location, however setback distances are critical to maintain vision corners. Keeping sign clutter and other visual distractions to an absolute minimum is also a key pedestrian safety issue.

Another extremely important concept to keep in mind for this development is to develop good street system interconnectedness and flow through the development to better spread the traffic ingress and egress and avoid overloading conflict points at any one spot.

Traditionally, residential areas have been developed on a rectangular grid pattern which inhibits flow within the subdivision. Modern developments have realized the benefits of curved access roadways which encourage slower speeds and facilitate flow to the arterials.

The concept of interconnectedness is illustrated in the following excerpt taken from the Guidebook and reprinted on the following page for easy reference.

Figure 2-4 Interconnected Streets



(Map Item #10)

Redevelopment of the currently vacant Lakeshore, Inc. Property;

The north end of River Street (Downtown) business loop is an area to monitor closely as the existing facility is redeveloped. The Village would especially welcome a mixed residential commercial development of this site, which is located at the north edge of the Village on the shore of Lake Superior. If it is redeveloped as an industrial site, it would increase truck traffic which is not as attractive to the local businesses, and would negate one of the benefits of the M-64 bridge relocation. Environmental concerns due to its original use as an old industrial site are probably a factor in delaying the sale of this \$1.7 million property. However, the site is in a prime location with all utilities in place, and it is just a matter of time before redevelopment occurs.

Vacant developable land along the Ontonagon River on River Road;

This area with its scenic views of the Ontonagon River located immediately upstream of the new bridge and in close proximity to the Marina is ripe for development of upscale residential homes. The River Road intersection is an area to monitor closely as development grows in this location. See also previous discussion of the new River Road intersection **(Map Item #2)**.

Expansion of the Township Park (north of town on the Lake Superior shoreline);

The Houghton Street intersection with River Street (Downtown) is an area to monitor closely, as the township park continues its expansion to well over 100 campsites with improved toilet and shower facilities. The park is located along a pristine section of the Lake Superior shoreline and is a nationally recognized location. It is primarily accessed off of Houghton Street which then flows to Lakeshore Drive (northeast of the Village). This route also carries logging truck traffic from forestlands located north east of the Village.

Highway US-45 –Business Spur Issues

(Map Item #11) - Downtown snow removal/ storage are a concern for intersection sight distance. Another significant source of crashes in the downtown (along River Street) was related to parking /backing maneuvers. Possible measures to address parking and backing issues include eliminating parking spaces adjacent to intersections, or increasing the length of spaces. Intersections on River Street include curbs which are “bumped out” to keep cars from parking next to intersections, and parking spaces are of adequate length.

Concerns have been expressed regarding the parking system on Copper Street. This is a main route between the nearby fire hall on River Street and residential areas in the northeast part of the village. This street currently provides angled parking on both sides. If large vehicles use these spots it often leaves little space for emergency vehicles to get through, due to the narrowness of the street. This is mainly a seasonal issue and seems to be worsening as the

size of trucks increases and space-consuming accessories like hitches and plows become more popular. One possible solution would be to study the number of spaces required for the businesses located in this area of Copper Street and if a few spots can be eliminated, change the east side to parallel parking.



Photo 15: The Village fire hall located on River Street at the Copper Street intersection.



Photo 16: Looking north along Copper Street from the fire hall. Changing from angle parking to parallel parking on the east side of Copper Street would provide additional room for emergency vehicles.

Another significant reduction in conflict points and related crashes along the corridor could be achieved by improving interconnectedness and vehicular flow in to the parking lots and out of them into adjacent alleys. On the south side of River Street, parking lots and alleys are interconnected and provide through traffic from Houghton Street to US-45. However, there is poor delineation between parking areas and through traffic, and traveling from Houghton Street to US-45 requires winding in and out of several different parking lots and alleys. Pavement markings, curbing, and possibly relocation of some parking areas could improve traffic flow and encourage local traffic to use this area rather than River Street. North of River Street, there is little interconnectedness between parking lots. Limited intersection sight distance due to parking spaces located too close to driveways for gas stations, banks, and other drive-thrus should be constantly surveyed and parking spaces eliminated when necessary.

In particular several downtown locations need to be reviewed for providing adequate truck turning radii and parking spaces removed which are located too close to the intersections. “Bump outs” adjacent to intersections along River Street help to prevent vehicles from parking too close to intersections, but clear vision issues still exist at times due to the size of parked vehicles, snow storage, etc.

At the Houghton Street intersection, special concern should be given to conflicts between campground RV traffic and large delivery trucks. Also, logging trucks come into town on Houghton Street and damage the curb while turning on to River Street.



Photo 17: Typical curb damage to a “bump out” along River Street

The proposed truck loop at the north end of River Street will result in an increase of delivery trucks turning in residential areas. Access control is needed for the Inn Town Motel at the Chippewa Street/ Michigan Street intersection, where there is poor separation of the parking lots and streets. It will also be necessary to limit access for all future drives in this truck loop area. Access should be from the alleys. Access off of Michigan Street should be prohibited to maintain safety and capacity of the Business Loop.

Lamp posts, garbage bins, plantings, etc. should be moved outside of clear vision corners at all intersections in the downtown area if necessary, since these objects can obscure views of/from pedestrians and motorcycles. This was mentioned by the public as a possible issue, but field observations indicate minimal interference with sight distance.



Photo 19: Decorative lighting along River Street (US-45).



Photo 18: Parking for the Inn Town Motel is provided on Chippewa Street by the lobby entrance (shown), along Michigan Street, and in a parking lot off Chippewa Street. Parking along Michigan Street is not separated from the street, and cars back directly onto the street.

One particular location with a high crash concentration on Michigan Street is the Houghton Street intersection. Traffic speeds may be a factor in addition to the existing hill on Michigan Street which impacts sight distance especially for westbound traffic. This spot should continue to be monitored with respect to these issues and improvements made as future safety project funds become available. Snow storage should continue to be monitored to maximize intersection sight distance.



Photo 20: Hill on Michigan Street near intersection with Houghton Street.